

J. A. MASEK DBA
MASEK OIL CO.
BARBARA B. SWEENEY

IBLA 85-157, IBLA 85-158

Decided May 6, 1986

Appeals from decisions of the Wyoming State Office, Bureau of Land Management, increasing the annual rental rate for noncompetitive oil and gas leases. W-65597 and W-67456.

Affirmed.

1. Oil and Gas Leases: Known Geologic Structure -- Oil and Gas Leases: Rentals
BLM may properly require the holder of a noncompetitive oil and gas lease to pay an increased rental of \$ 2 per acre for the entire leasehold pursuant to 43 CFR 3103.2-2(d), where BLM determines during the lease term that any part of the lands included in the lease is within a known geologic structure.

2. Oil and Gas Leases: Known Geologic Structure

A BLM determination that land leased for oil and gas is within a known geologic structure will not be overturned where the evidence establishes that the land is within a section transected by the 20 foot isopach of a productive formation and the lessee fails to present a preponderance of evidence to the contrary.

APPEARANCES: David Nicholson, Landman, Masek Oil Company, for J. A. Masek dba Masek Oil Company, and Corrida Oils, Inc.; Barbara B. Sweeney, pro se; Lowell L. Madsen, Esq., Office of the Regional Solicitor, U.S. Department of the Interior, Denver, Colorado, for the Bureau of Land Management.

OPINION BY ADMINISTRATIVE JUDGE FRAZIER

J. A. Masek dba Masek Oil Company (Masek) and Corrida Oils, Inc. (Corrida Oils) and Barbara B. Sweeney have appealed from decisions of the Wyoming State Office, Bureau of Land Management (BLM), dated October 26 and October 25, 1984, respectively, increasing the annual rental rate for appellants' noncompetitive oil and gas leases, W-65597 and W-67456, from \$ 1 to \$ 2

per acre, or fraction thereof, "[b]eginning with the lease year which starts at least 30 days from your receipt of this notice, and for each year thereafter." BLM increased the annual rental rate because "all or part of the land" in appellants' leases had been determined to be within an undefined addition to the Frenchie Draw known geologic structure (KGS), designated effective June 25, 1984. ^{1/}

Effective February 1, 1979, BLM issued a noncompetitive oil and gas lease (W-65597) to J. A. Masek for 800 acres of land situated in Natrona and Fremont counties, Wyoming, pursuant to section 17 of the Mineral Leasing Act, as amended, 30 U.S.C. § 226 (1982). ^{2/} A portion of the lease acreage is situated within the undefined addition to the Frenchie Draw KGS, described as the S 1/2 NE 1/4 sec. 4, T. 36 N., R. 89 W., Sixth principal meridian, Wyoming. Effective November 1, 1979, BLM issued a noncompetitive oil and gas lease (W-67456) to Barbara B. Sweeney for 2069.87 acres of land situated in Natrona County, Wyoming, pursuant to section 17 of the Mineral Leasing Act, *supra*. A portion of the lease acreage is situated within the undefined addition to the Frenchie Draw KGS, described as the E 1/2 SE 1/4 sec. 7, NE 1/4, W 1/2 W 1/2, E 1/2 SE 1/4 sec. 17 and the NE 1/4 sec. 18, T. 37 N., R. 88 W., Sixth principal meridian, Wyoming.

A narrative included in the Frenchie Draw KGS case file explains the basis for the BLM determination to expand the Frenchie Draw KGS to include reservoirs in the Fort Union and Lance formations:

In the Frenchie Draw field, the Lower Fort Union and Lance Formation gas reservoirs consist of lenticular sands often only a few hundred acres in extent. Porosity and permeability appear generally low and natural and induced fracturing plays an important role in the producibility of an individual sand. Parameters important in identifying potential reservoir sands include a higher than average porosity and a large enough aerial extent to provide a producible reservoir.

The net potential Lower Fort Union/Lance reservoir thickness at each drill hole was determined through perforations, drill stem tests, and drill cores. The full Lower Fort Union and Lance sections were not penetrated in each drill hole so the full amount of potential reservoir may not be shown at each data point. There are two drill holes which give anomalous results compared to surrounding drill holes. The number one Brown Federal in T. 37 N., R. 90 W., section 20 is not as deep as surrounding wells. It is probable that additional potential reservoir thickness would have been encountered at increased depth and this point would not have been anomalous. The number one Graham Unit in T. 37 N.,

^{1/} The joint appeal of J. A. Masek and Corrida Oils is docketed IBLA 85-157. The appeal of Barbara B. Sweeney is docketed IBLA 85-158.

^{2/} Effective August 1, 1981, Masek assigned a 50 percent record title interest in oil and gas lease W-65597 to MSZ Resources, Inc., which name was later changed to Corrida Oils, Inc.

R. 89 W., Section 15, SW 1/4 also produced anomalous results. It is possible that all potential reservoirs were not tested and therefore, actual potential reservoir thickness would be greater than shown on the attached isopach map.

Perforated intervals were included only if productive of natural gas and the interval thickness was adjusted through the use of well logs. Gamma Ray Logs were used to determine the sand thickness perforated. Porosity logs (predominately Sonic Logs) were used to eliminate low porosity (below 8%) sand horizons from the net potential reservoir thickness. Resistivity logs were used to eliminate water-filled sand thickness from the net potential reservoir thickness.

Drill stem tests were also used to determine the net potential reservoir thickness at each data point. Only drill stem test intervals which produced at rates greater than 100 MCFGPD were included as net potential reservoir thickness. The 100 MCFGPD minimum rate was chosen as a conservative estimate representing a potential reservoir sand. Choosing a lower rate would result in either no or minimal further expansion of the KGS. These DST intervals were then adjusted to net potential reservoir thickness through the use of well logs in the same manner as perforated intervals were adjusted.

The net potential reservoir thickness was isopached as shown on the attached map and the resultant KGS boundary was drawn to include all sections cut by the 20 foot isopach. The eastern end of the KGS is shown as closed, however, further study of fields to the east such as Garrison, Neal Reservoir, Waltman and Cooper Reservoir may result in the expansion of this KGS to the east. Further exploration could also result in expansion in other directions.

There are 10 wells within the 20 foot isopach line which were drilled and abandoned without being produced. All of these wells were completed prior to 1975 when the price of natural gas was low and completion techniques were not as good as they are now. Reservoir fracturing technology has been much improved in recent years resulting in many more tight sands being completed as producers. These factors resulted in many wells being plugged which, if market conditions were better, would have been produced.

Masek and Corrida Oils, in their statement of reasons for appeal, contend that the 80-acre portion of their lease affected by the KGS determination should not be included in the KGS because the isopach map indicates that there are "no economically viable pay sands" in the Fort Union and Lance formations underlying the leased lands. Appellants point out that the 20 foot isopach "minimally intersects" sec. 4, T. 36 N., R. 89 W., Sixth principal meridian, Wyoming, and could "reasonably" be placed outside section 4. These appellants request either removal of the leased lands within the KGS "from the KGS" or "[s]egregation" of the leased lands outside the KGS.

In response to their statement of reasons, the Regional Solicitor, on behalf of BLM, argues that the 20 foot isopach is properly placed in the area of the leased lands to maintain "equal spacing of isopachs from the nearest point of control," which in that area is "well number 3" situated in the NE 1/4 SW 1/4 sec. 33, T. 37 N., R. 89 W., Sixth principal meridian, Wyoming. The Regional Solicitor also states that having been crossed by the 20 foot isopach, all of section 4, was properly placed in the KGS because it is "accepted practice to include the entire oil and gas spacing unit [in this case, 640 acres,] in the KGS if any portion of it is determined to be presumptively productive."

Sweeney, in her statement of reasons for appeal contends that the portion of her lease affected by the KGS determination should not be included in the KGS because the nearest production is two miles southwest of the leased lands, which are in a "structural depression" which would not be commercially productive from the Fort Union and Lance formations. As evidence that the formations would not be commercially productive, appellant points to two "dry holes," the Pan American No. 1 Unit well and the Hilliard Oil and Gas No. 1 Cullen-Alkali Creek well. The Pan American well, situated in the SW 1/4 NE 1/4 sec. 18, T. 37 N., R. 88 W., Sixth principal meridian, Wyoming, within lease W-67456 was completed in August 1964 at a total depth of 11,502 feet. Appellant states that the well "penetrated the producing horizons of the Frenchie Draw field without success." Two intervals were perforated in the Lance formation with the upper interval flowing gas at the "non-commercial rate" of 100 MCFPD. One drill stem test indicates gas flowing at the rate of from 77.1 to 148 MCFPD from the Lance formation. The Hilliard Oil and Gas well, situated in the SE 1/4 NW 1/4 sec. 20, T. 37 N., R. 88 W., Sixth principal meridian, Wyoming, one-half mile south of lease W-67456 was completed September 1974 at a total depth of 10,522 feet. Appellant states that the well "penetrated both producing horizons of the Frenchie Draw field," with drill stem tests indicating "no commercial quantities of gas." Those drill stem tests indicate gas flowing at the rate of from 191 to 226 MCFPD and from 19 to 110 MCFPD from the Fort Union formation. Appellant also notes that the Hilliard Oil and Gas well indicates that the two producing formations are "structurally lower" under the leased lands at the eastern edge of the KGS.

In response to Sweeney's statement of reasons, the Regional Solicitor argues that, regardless of the fact that the nearest production is two miles southwest of the leased lands, those lands are "presumptively productive." The Regional Solicitor points out that the drill hole data from the Pan American well was used by BLM to calculate a net potential reservoir thickness of 58 feet underlying the leased lands at that point. The Regional Solicitor also points out that the drill hole data from the Hilliard Oil and Gas well was used by BLM to calculate a net potential reservoir thickness of 137 feet at that point. The Regional Solicitor argues that the land at both points is presumptively productive based on the drill hole data. Finally, the Regional Solicitor notes that two wells which are near lease W-67456 and "structurally lower" than the Pan American well are, nevertheless, "producing." These wells are the No. 1-29 Knoll situated in the SW 1/4 NW 1/4 sec. 29, T. 37 N., R. 88 W., and the No. 2 Graham situated in the NW 1/4 NE 1/4 sec. 3, T. 37 N., R. 89 W., Sixth principal meridian, Wyoming.

[1] It is well established that when BLM has determined that any part of the lands described in a noncompetitive oil and gas lease is within an addition to a KGS, the lessee is properly required by BLM to pay an increased annual rental of \$ 2 per acre for the entire leasehold pursuant to 43 CFR 3103.2-2(d). James D. Creighton, 87 IBLA 79 (1985), and cases cited therein.

[2] Neither of the appellants challenge this regulatory requirement, rather they contend that BLM should not have included portions of their oil and gas leases within an undefined addition to the Frenchie Draw KGS. This Board has previously held that an appellant challenging a KGS determination, has the burden of proving by a preponderance of the evidence that the KGS determination is in error. Mary Lee H. Picou, 88 IBLA 356 (1985); Evelyn D. Ruckstuhl, 85 IBLA 69 (1985). Sufficient evidence was not provided by either appellant to demonstrate that the BLM KGS determination is in error.

A KGS is defined as "technically the trap in which an accumulation of oil or gas has been discovered by drilling and determined to be productive, the limits of which include all acreage that is presumptively productive." 43 CFR 3100.0-5(1). A KGS designation recognizes the existence of a continuous entrapping structure on some part of which there is production. Lloyd Chemical Sales, Inc., 82 IBLA 182 (1984). Accordingly, it is not necessary that there be production within or in the immediate vicinity of land designated as part of a KGS, as long as the land is determined to be "presumptively productive" on the basis of geologic evidence of the existence of a productive structure underlying the land. R. K. O'Connell, 85 IBLA 29 (1985).

The inclusion of the land in appellants' leases within the Frenchie Draw KGS is directly based on the presumed existence of the Fort Union and Lance formations, which had been determined to be productive in the area, underlying that land. However, BLM limited the KGS to only those sections which were underlain in whole or in part by a net potential reservoir thickness in those formations of at least 20 feet. That minimum thickness had proven to be productive and is depicted on the isopach map as an isopach, which clearly cuts across the sections of land included in both the Masek/Corrida Oils and Sweeney leases.

BLM states that it is an "accepted practice" to include an entire oil and gas spacing unit in a KGS if any portion has been determined to be presumptively productive. Thus, in this case, where the spacing unit is 640 acres, BLM included the entire 640 acres in sec. 4, T. 36 N., R. 89 W., Sixth principal meridian, Wyoming, in the Frenchie Draw KGS. Masek and Corrida Oils, who challenge this practice, however, have submitted no evidence that this practice results in including land within a KGS which is otherwise not presumptively productive. As the Department has long held: "The boundaries [of a KGS] are defined for administrative purposes and cannot be taken as absolutely and accurately showing the extent of the geological structure producing oil or gas." Robert G. Lynn, 61 IBLA 153, 155 (1982), and cases cited therein. Moreover, Masek and Corrida Oils have presented no evidence supporting their assertion that the 20-foot isopach should be placed outside section 4. Accordingly, we must conclude that BLM properly included a portion of the lands in Masek's and Corrida Oils' oil

and gas lease W-65597 within the Frenchie Draw KGS. 3/ Edward W. Eidt, 89 IBLA 270 (1985); Ronald C. Agel, 87 IBLA 255 (1985).

Sweeney's challenge to the inclusion of her leased lands in the Frenchie Draw KGS is based principally on her assertion that the land would not be commercially productive from the Fort Union and Lance formations, as evidenced by two nearby "dry holes." BLM obviously regards these wells as capable of being commercially productive where they were used in part as the basis for extending the KGS boundary. BLM used the standard of whether the wells were capable of producing at least 100 MCFGPD. That capability had been determined by actual production and drill stem tests. Appellant regards this minimum rate of flow as "noncommercial" but has submitted no evidence in support of this assertion. Moreover, appellant has not demonstrated by a preponderance of the evidence that the leased lands are in a "structurally unfavorable location for hydrocarbon accumulation." Rather, the evidence indicates that, while structurally lower than those lands closer to the center of the KGS, the lands are still in a favorable location. Accordingly, we must conclude that BLM properly included a portion of the lands in Sweeney's oil and gas lease W-67456 within the Frenchie Draw KGS. James Muslow, Sr., 51 IBLA 19 (1980).

Pursuant to the authority delegated to the Board of Land Appeals by the Secretary of the Interior, 43 CFR 4.1, the decisions appealed from are affirmed.

Gail M. Frazier

Administrative Judge

We concur:

Franklin D. Arness
Administrative Judge

John H. Kelly
Administrative Judge.

3/ Masek and Corrida Oils request the board to segregate the lease so that the portion of the lease outside the KGS is a separate lease. Segregation of a lease generally occurs where a portion of the lease is committed to a unit. 30 U.S.C. § 226(j) (1982); 43 CFR 3107.3-2. A lessee may also effect a segregation by assigning a portion of his lease. 43 CFR 3106.1. A lessee also has the option of relinquishing a portion of his lease. 43 CFR 3108.1. However, neither the Board nor BLM has the authority to segregate a lease at the mere request of the lessee where the dividend portions of the lease would remain in the hands of the original lessee.

